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ABSTRACT

THE OBJECTIVE OF THIS STUDY WAS TO INVESTIGATE THE PERSONOLOGICAL FACTORS UNDERLYING MARIJUANA USE IN THE COLLEGE POPULATION. UNDER ANONYMOUS CONDITIONS, 148 STUDENTS AT TWO UNIVERSITIES COMPLETED THE CALIFORNIA PSYCHOLOGICAL INVENTORY AND A BIOGRAPHICAL QUESTIONNAIRE CONCERNING DRUG USAGE. FOUR CONCLUSIONS WERE REACHED: (1) MARIJUANA USE AT TWO UNIVERSITIES CAN BE PREDICTED WITH FAIR ACCURACY, (2) USERS AND NON-USERS ARE INDISTINGUISHABLE WITH REGARD TO THEIR SECONDARY EDUCATION, EXTRACURRICULAR ACTIVITIES, OR ATHLETIC PARTICIPATION. THEY DIFFER, HOWEVER, IN FRATERNITY MEMBERSHIP, ACADEMIC MAJOR, YEAR IN SCHOOL, AND SCHOLASTIC ACHIEVEMENT. (3) USERS SHOW A PERSONALITY PATTERN SOMEWHAT AT VARIANCE WITH MANY STEREOTYPES, WHILE THEY ARE IN SOME WAYS ANTI-SOCIAL, THEY ARE CHARACTERIZED BY VALUABLE TRAITS AS WELL, AND (4) THE CHARACTER STRUCTURE OF NON-USERS IS NOT NECESSARILY SUPERIOR TO THAT OF USERS. MARIJUANA USE IS PERHAPS MORE PROPERLY CLASSIFIED AS AMORAL THAN IMMORAL, AND CURRENT DISAPPROVAL OF ITS USE MAY REFLECT A CULTURAL EMPHASIS RATHER THAN A TRULY "MORAL" JUDGMENT. (AUTHOR/EK)

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Abstract

Under anonymous conditions, 148 students at two universities completed the CPI and a biographical questionnaire concerning the use of marijuana and other drugs. Four levels of marijuana use were defined with the questionnaire: frequent users; occasional users; non-users; and principled non-users. The groups differed significantly on 10 of 19 CPI scales and 4 questionnaire items. As a group, users appeared socially poised, open to experience, and concerned with the feelings of others. Conversely, they also seemed impulsive, pleasure-seeking, and rebellious. In contrast, non-users were responsible and rule-abiding; however, they also tended to be inflexible, conventional, and narrow in their interests. Both frequent users and principled non-users appeared as less than morally mature on two scales designed to predict moral behavior.

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Personality Correlates of Undergraduate Marijuana Use[1]

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In view of mounting concern over marijuana use on college campuses and elsewhere, it is surprising to note the dearth of systematic investigations either of its effects or of the personality characteristics associated with its use. One of the first published studies of the effects of marijuana appeared only recently (Weil, Zinberg, and Nelsen, 1968). The research to be reported here is concerned with a portion of the second problem mentioned above, i.e., the personological factors underlying marijuana use in the college population. Although a great deal of speculation on this issue has appeared in the popular press, virtually no empirical research has been published on the topic. It should be noted at the outset, however, that this study involves one specific region of the country and a somewhat circumscribed student population. Thus the results and interpretations presented below should be considered as tentative and subject to future revision.

Method

The study was based on two measuring devices. The first was a brief (15 item) biographical questionnaire, discussed in detail below, which asked respondents for basic demographic information, academic field of interest, grade point average, etc., and contained 5 questions about the use of marijuana and other drugs. Four levels of marijuana use were defined with this

questionnaire: (1) students who reported smoking marijuana fairly regularly (frequent users); (2) students who reported using marijuana 10 times or less (occasional users); (3) students who indicated they had not smoked marijuana (non-users); and (4) students who said they had not and never would smoke marijuana (principled non-users).

The second measuring device was the California Psychological Inventory (CPI; Gough, 1957). The CPI was scored for the standard 18 scales plus an additional scale developed by the first author (Hogan, 1969).

The Ss for the study included 76 male undergraduates at The Johns Hopkins University and 72 undergraduate men from Lehigh University. All students were tested anonymously and their identities are unknown to the authors.

The Hopkins students were tested individually at the campus student union. This sample contained 23 frequent users, 14 occasional users, 16 non-users, and 23 principled non-users. The students from Lehigh University (a school comparable to Hopkins in terms of size, geographic location, and the academic interests of the student body) were drawn from a large introductory psychology course. There were 14 frequent users, 9 occasional users, 28 non-users, and 21 principled non-users in this group.

Results

The biographical questionnaire results are presented in Table 1, where non-significant findings concerning place of birth, size of home town, and plans after graduation are omitted (most students came from moderately large to large cities on the eastern seaboard, and the four groups had quite similar career aspirations). The students differed with regard to 4 of the 10

questionnaire variables, the strongest difference appearing in fraternity membership. Table 1 shows that frequent users are more often fraternity members than are occasional users, non-users, and principled non-users. The data from Table 1 also suggest a modest trend for Freshmen to cluster in the principled non-user category, for frequent and occasional users to major in the humanities and social sciences, and finally, for users as a group to attain slightly better grades than non-users.

The last finding from the biographical questionnaire concerns the degree to which marijuana use predicts experimentation with other drugs. The data for users from both schools combined (N = 60) show that 61.7% had also used hashish, 18.3% opium, 30% amphetamines, 25% LSD, and 1.6%, or one case, had tried heroin. Thus there seems to be some association between smoking marijuana and using other drugs, although no causal relationships may be inferred. Furthermore, within this sample no evidence is found for the common conjecture that marijuana users turn inevitably to heroin. The degree to which this latter finding would hold for less socially advantaged populations is obviously a matter for further investigation.

The data obtained from the CPI provide evidence about the personological determinants of marijuana use. The full sample of 148 students was classified by usage into 4 groups, and a one-way analysis of variance was conducted for each of the 19 CPI scales. Ten of the 19 scales differentiated between the four levels of use at or beyond the .05 level of statistical significance (see Table 2). Users as a group scored highest on Capacity for Status (Cs), Social Presence (Sp), Achievement via Independence (Ai), Flexibility (Fx), and Empathy (Em). Users scored lowest on Sociability (Sy), Responsibility

(Re), Socialization (So), Communality (Cm), and Achievement via Conformity (Ac). The pattern was exactly reversed for the two combined groups of non-users.

Although it is gratifying to know that the 4 groups can be differentiated with regard to their CPI scores, it is also important to inquire about the strength of the observed relationships. Dividing the sample into groups of 60 users and 88 non-users, a discriminant function analysis was conducted using the 10 scales significant in the previous analysis of variance. The resulting discriminant functions accurately classified 82% of both users and non-users (generalized Mahalanobis D square: 78.9, df= 10, $p < .01$), a hit rate which clearly exceeds a chance level of accuracy.

Discussion

Some decrease in the hit rate reported above will obviously occur on cross-validation; thus no claims can be made for the extent of the relationships observed in this first analysis. However, it is unlikely that future analyses will reveal any major changes in the pattern of these associations, or in their essential components.

The 10 scales listed above seem related to professed marijuana use in an important way; thus it is proper to examine their social and interpersonal implications. Considerable information is available for the interpretation of these scales (Gough, 1957, 1968; Hogan, 1969), and the interested reader should consult these sources to verify the accuracy of the following remarks. For discussion purposes, frequent users will be contrasted with principled non-users. Occasional users and non-users fall between these two

groups on most measures. Frequent users are characterized by high scores on Cs, Sp, and Fx. Such persons tend to be self-confident, socially poised, skilled in interpersonal relations, and possess a wide range of interests. On the other hand, they also tend toward narcissism, self-aggrandizement, and over-concern with personal pleasure and diversion.

Frequent users received low scores on So, Re, Cm, and Ac. These scores suggest that frequent users will be hostile to rules and conventions, impulsive, somewhat irresponsible, and rather nonconforming. Finally, the users' high scores on Ai and Fm indicate that they have the sort of achievement motivation necessary for success in graduate school, and that they are socially perceptive and sensitive to the needs and feelings of others. Thus, undergraduate marijuana use is a complex syndrome in which social poise is offset by a somewhat assertive nonconformity, empathy by narcissism, wide interests and achievement potential by impulsiveness and irresponsibility.

The profile for principled non-users is similarly complex. The pattern of high scores on Re, So, Cm, and Ac indicates that these persons will be pleasant, responsible, considerate, and dutiful. On the other hand, they will tend to be rather conventional and lacking in spontaneity and verve. This trend is reinforced by low scores for Cs, Sp, Ai, Fx, and Em, which further suggest that principled non-users are perhaps too deferential to external authority, narrow in their interests, and over-controlled. As in the case of the frequent users, we see a complicated pattern, with responsibility and maturity balanced by authoritarian compliance, and devotion to duty by a narrow interest span.

As a final guide to the understanding of these behavior patterns, it

would be useful if we could characterize the general moral posture of our subjects. There are two ways in which we can estimate this posture. The first method involves using a CPI-based "Social Maturity Index"(Gough, 1966; Gough, DeVos, and Mizushima, 1968) where social maturity is defined as follows:

"Social maturity, in its highest form, involves the creation of new order, and hence the destruction of old order. The highly socialized individual can live by the rules, however oppressive . . . The socially mature individual, on the other hand, although able to adapt to convention, is receptive to change and innovation, and under repressive conditions may set himself against the established order" (Gough, 1966, p. 190).

This social maturity index was originally defined by comparing the responses of 2,146 non-delinquents with those of 881 delinquents on the CPI and developing a six variable regression equation to distinguish between the groups. In a cross-validating sample of 2,482 non-delinquents and 409 delinquents, the point-biserial correlation between the index and the delinquency-non-delinquency criterion was .63. High scorers on the equation are described in peer ratings as rational, idealistic, wholesome, clear-thinking, and organized. Low scorers are seen as shallow, intolerant, nervous, temperamental, and frivolous. The constants and weights for the equation have been adjusted so that the mean score on the index in a normal population will be 50.0. In the original sample, the non-delinquent mean was 50.4, the mean delinquent score was 42.7.

In the present study, the frequent users had a mean score on the social maturity index of 49.5, the occasional users mean score was 50.5, the mean

non-users' score was 50.4, and for the principled non-users, the mean score was 51.6. This yields an F ratio of 2.81 ($df = 3, 144$; $p < .05$). Thus there is a dependable difference between the groups in terms of social maturity as measured by Gough's index, with principled non-users receiving the highest scores. However, all groups are relatively mature when compared with the mean score of Gough's original delinquent sample.

The first author has outlined an alternative method by which the moral posture of these Ss can be estimated (Hogan, 1967). This method assumes that moral development proceeds along 5 important dimensions (moral knowledge, socialization, empathy, autonomy, and principles to justify moral decisions in conditions of normlessness). A first step toward assessing the character structure of an individual can be made after taking all of these dimensions into consideration.

It was not possible to obtain scores for our subjects on all 5 dimensions; however measures of two of the key variables (socialization and empathy) are found in the CPI. The four combinations of high and low scores on these scales form a simple but interesting typology. According to the model, persons who ~~score~~ SCORE high on both So and Em would be regarded as morally mature, all other dimensions being equal. Persons high on So but low on Em would be considered well-socialized rule-followers, but somewhat deficient in charitable or benevolent tendencies. Subjects scoring low on So but high on Em would be careless of rules and conventions, but disposed to adopt a "broad moral perspective," i.e., to consider the implications of their actions for the welfare of others (Hogan, 1969). Finally, delinquents would score low on both scales. Compared with men in general (see Table 3), principled

non-users receive high So and low Fm scores. By the same standard, frequent users are low on So and high on Fm. Occasional users and simple non-users score between the "extreme" groups. Thus, it is difficult to assign more or less virtue to either extreme group. Rather frequent users and principled non-users seem to represent two different moral postures, each with its own particular strengths and weaknesses. Occasional users and simple non-users share these features to a lesser degree.

Conclusions

The preceding discussion leads us to four conclusions. First, professed marijuana use at two small eastern universities can be predicted with fair accuracy. However, the degree to which our methods and findings would apply to other groups with high marijuana usage (ghetto blacks, Mexican-Americans in the southwest) is obviously an open question. For these groups, the dynamics of the behavior and the character structure of the participants will undoubtedly differ markedly from our sample, thus different results should obtain. Second, users and non-users are indistinguishable with regard to their secondary education, extracurricular activities, or athletic participation. They do differ, however, in terms of fraternity membership, and to a lesser degree in their academic major, year in school, and scholastic achievment. Third, marijuana users show a personality pattern which is somewhat at variance with many popular stereotypes. In comparison with non-users, they are more socially skilled, have a broader range of interests, are more adventuresome, and more concerned with the feelings of others. Conversely, and in accordance with general opinion, they are also impulsive and non-con-

forming. However it is the complexity of this pattern we wish to emphasize. While users are in some ways anti-social, they are characterized by other rather valuable traits as well, i.e., interpersonal sensitivity and intellectual curiosity. Finally, we would like to argue that, in the long run, the character structure of non-users is not necessarily superior to that of users. This judgment is based on the fact that frequent users and principled non-users receive rather similar scores when compared with delinquents on a well-validated index of social maturity, and both appear less than morally mature when assessed in terms of two scales specifically designed to predict moral behavior. In general terms, marijuana use is a solipsistic or self-regarding activity which is perhaps more properly classified as amoral than immoral, and current disapproval of its use may reflect a cultural emphasis rather than a truly "moral" judgment.

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Footnotes

[1]An earlier version of this paper was presented at the 1969 annual meeting of EPA.

[2]James Deese and Harrison Gough contributed several valuable criticisms of the earlier form of this paper, for which the authors are grateful.

Table 1

Biographical Data and Marijuana Use

Biographical Variables	Marijuana Use				df	X^2	p
1. Secondary Education:	FU	OU	NU	PNU			
Parochial or Private	9	4	10	8			
Public	28	19	34	36	3	.70	N.S.
2. Extracurricular Activities:*							
None	8	6	12	12			
One	11	8	10	14			
Two or more	18	9	21	17	6	2.00	N.S.
3. Athletic Participation:							
Intramural and/or Varsity	21	13	33	30			
None	16	10	11	14	3	3.96	N.S.
4. Grade Point Average:*							
0 - 2.5	18	9	28	19			
2.6 - 4.0	19	14	13	21	3	6.42	.10
5. Academic Major:							
Humanities/Social Sciences	29	16	26	23			
Biological-Physical Sciences	8	7	18	21	3	6.58	.10
6. Year in School:*							
Freshman/Sophomore	15	12	23	30			
Junior/Senior	22	11	21	13	3	7.03	.10
7. Fraternity Membership:							
Yes	23	6	19	16			
No	14	17	25	28	3	8.92	.05

* Less than 148 Ss responded to these items

Legend: FU - Frequent User; OU - Occasional User; NU - Non-user; PNU - Principled Non-user.

Table 2

Means and Analysis of Variance Results for the California Psychological Inventory and Four Levels of Marijuana Use

		Level of Marijuana Use				Significance Level
		FU	OU	NU	PNU	
1.	Dominance	29.4	28.8	27.3	27.9	N.S.
2.	Capacity for Status	21.7	20.1	19.3	19.3	.05
3.	Sociability	26.7	24.0	29.3	24.6	.05
4.	Social Presence	42.1	39.4	37.9	36.6	.01
5.	Self-acceptance	24.4	22.8	22.7	22.9	N.S.
6.	Well Being	34.4	32.2	33.9	33.9	N.S.
7.	Responsibility	25.8	26.1	28.2	29.7	.01
8.	Socialization	30.9	32.6	33.0	36.8	.01
9.	Self-control	21.0	19.6	22.0	24.1	N.S.
10.	Tolerance	21.4	19.6	20.2	19.6	N.S.
11.	Good Impression	14.7	11.8	13.3	15.0	N.S.
12.	Communality	23.5	24.6	24.7	25.4	.01
13.	Achievement-Conformance	23.2	23.6	23.8	26.1	.05
14.	Achievement-Independence	22.4	20.7	22.8	19.4	.05
15.	Intellectual Efficiency	40.5	38.2	38.6	37.7	N.S.
16.	Psychological Mindedness	12.1	11.5	11.1	10.8	N.S.
17.	Flexibility	16.0	14.7	12.9	10.8	.01
18.	Femininity	17.3	16.9	16.0	16.8	N.S.
19.	Empathy	26.6	24.2	22.7	21.4	.01

N equals 148
Legend: FU - Frequent Users; OU - Occasional Users; NU - Non-users; PNU - Principled Non-users.

Table 3

Mean Scores for 3 Groups of Men on the Socialization and Empathy Scales of the California Psychological Inventory

	Scales	
Groups	Socialization	Empathy
Frequent Users	30.9	26.6
Men in General	36.5*	23.0*
Principled Non-users	36.8	21.4

* Values abstracted from Gough (1957) and Hogan (1969).